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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,161	06/26/2001	Michael R. Ohran	14113.3.2.2	4716

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EXAMINER
COLBERT, ELLA

ART UNIT	PAPER NUMBER
3624	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		09/892,161	OHRAN, MICHAEL R.
		Examiner	Art Unit
		Ella Colbert	3624

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 June 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-39* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   Paper No(s)/Mail Date. _____.
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)   5)☐ Notice of Informal Patent Application (PTO-152)
   Paper No(s)/Mail Date _____.   6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-7 and 9-39 are pending. Claim 8 has been cancelled and claims 1, 3,

9, 16, 20, and 28 have been amended in this communication filed 06/29/05 entered as

Response After Non-Final Action.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-7 and 9-22 and 28-39 are rejected under 35 U.S.C. 103(a) as being

unpatentable over (WO 95/00906) Rollins et al, hereafter Rollins and (US 5,157,663)

Major et al, hereafter Major further in view of (US 6,047,356) Anderson et al, hereafter

Anderson.

        As per claim 1, Rollins teaches, A method of mirroring data stored on a first

server having a first mass storage device to a second server having a second mass

storage device so as to establish a virtual storage area network, the method comprising:

receiving a write request at the first server from a network device (page 6, lines 1-15);

determining that the first server has write access to the first mass storage device and to

the second mass storage device (page 7, lines 10 –21 and page 8, line 16-page 9, line

14); using an I/O driver of the first server, executing the write request at the first server

to write data to the first mass storage device (page 26, lines 5-21). Rollins failed to

teach, using a mirror engine of the first server, transmitting a copy of the write request

the second server; and executing the copy of the write request at the second server to

write the data to the second mass storage device, without processing the write request

using an I/O driver of the second server, thereby mirroring the data at the second mass

storage device, wherein the data is stored in a virtual shared storage node associated

with the first server and the second server. Major teaches, using a mirror engine of the

first server, transmitting a copy of the write request to the second server (col. 8, lines

56-64). Rollins and Major failed to teach, executing the copy of the write request at the

second server to write the data to the second mass storage device, without processing

the write request using an I/O driver of the second server, thereby mirroring the data at

the second mass storage device, wherein the data is stored in a virtual shared storage

node associated with the first server and the second server. Anderson teaches,

executing the copy of the write request at the second server to write the data to the

second mass storage device, without processing the write request using an I/O driver of

the second server, thereby mirroring the data at the second mass storage device,

wherein the data is stored in a virtual shared storage node associated with the first

server and the second server (col. 7, line 26-col. 8, line 23 and line 65- col. 10, line 33

and line 61-col. 11, line 7 and line 54- col. 12, line 11). It would have been obvious to

one having ordinary skill in the art at the time the invention was made to use a mirror

engine of the first server, transmit a copy of the write request at the second server,

execute the copy of the write request at the second server to write the data to the

second mass storage device, without processing the write request using an I/O driver of

the second server, thereby mirroring the data at the second mass storage device,

wherein the data is stored in a virtual shared storage node associated with the first

server and the second server and to combine Rollins' receiving a write request at the

first server from a network device; determining that the first server has write access to

the first mass storage device and to the second mass storage device; and executing the

write request at the first server so as to write data to the first mass storage device with

Major's using a mirror engine of the first server, transmitting a copy of the write request

to the second server; and Anderson's executing the copy of the write request at the

second server to write the data to the second mass storage device, without processing

the write request using an I/O driver of the second server, thereby mirroring the data at

the second mass storage device, wherein the data is stored in a virtual shared storage

node associated with the first server and the second server because such a

combination would allow Rollins' and Major's systems to have the ability to backup data

and to restore the data without losing any of the data because of a network disaster.

As per claim 2, Rollins teaches, A method of mirroring data as recited in claim

1, wherein transmitting a copy of the write request comprises transmitting the copy of

the write request using a dedicated link between the first server and the second server

(page 15, lines 4-17 and page 23, line 13 – page 24, line 12).

As per claim 3, Rollins teaches, A method of mirroring data as recited in claim 1,

wherein transmitting a copy of the write request comprises transmitting the copy of the

write request using infrastructure of the network, wherein the infrastructure is used by

the network to transmit data between workstations and servers (page 13, line 16 –page

14, line 14 and page 17, line 3- page 18, line 12).

As per claim 4, Rollins teaches, A method of mirroring data as recited in claim

1, further comprising: experiencing a failure such that the data is not accessible from the

first mass storage device; and executing a read request for data that has been written to

the first mass storage device by accessing the data that has been mirrored at the

second mass storage device (page 10, lines 1-21).

As per claim 5, Rollins teaches, A method of mirroring data as recited in claim 4,

wherein the failure comprises the first server going offline (page 21, line 18 –page 23,

line 12).

As per claim 6, Rollins teaches, A method of mirroring data as recited in claim 4,

wherein the failure comprises a failure of the first mass storage device (page 22, lines 8-

18).

As per claim 7, Rollins failed to teach, A method of mirroring data as recited in

claim 1, further comprising using a policing protocol, prior to executing the write request

at the, first server, to determine whether the first server has write access. Major

teaches, A method of mirroring data as recited in claim 1, further comprising using a

policing protocol, prior to executing the write request at the, first server, to determine

whether the first server has write access (col. 2, lines 42-63 and col. 6, lines 39-48). It

would have been obvious to one having ordinary skill in the art at the time the invention

was made to use a policing protocol, prior to executing the write request at the, first

server, to determine whether the first server has write access and to combine Rollins'

first server with the write access with Major's using a policing protocol prior to executing

the write request at the, first server, to determine whether the first server has write

access because such a modification would allow Rollins' and Major's systems to have

the servers synchronized prior to the secondary operating system reaching a stable

state.

As per claim 9, Rollins teaches, A method of mirroring data stored on a first

server having a the first mass storage device to the second mass storage device of a

second server so that the data is accessible to the first server and the second server

through a virtual storage area network, the method comprising: establishing a virtual

storage area network between the first server and the second server that ncludes a

virtual shared storage node, wherein the virtual shared storage node physically includes

the first mass storage device (page 17, line 3- page 18, line 12); the second mass

storage device (page 18, line 13- page 19, line 5); means for mirroring data between the

first mass storage device and the second mass storage device (page 20, lines 4-15);

and means for communicating between the first server and the second server (page 17,

lines 3-18). This independent claim is rejected for the similar rationale as given above

for claim 1.

As per claim 10, Rollins failed to teach, A method of mirroring data as recited in

claim 9, wherein said means for mirroring data comprises a first mirror engine

associated with the first server and a second mirror engine associated with the second

server. Major teaches, wherein said means for mirroring data comprises a first mirror

engine associated with the first server and a second mirror engine associated with the

second server (col. 9, lines 17-36). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have means for mirroring data comprises a first mirror engine associated with the first server and a second mirror engine associated with the second server and to combine Rollins' mirroring data with Major's means for mirroring data comprises a first mirror engine associated with the first server and a second mirror engine associated with the second server because such a combination would allow Rollins' and Major's systems to have a primary engine and a secondary engine for mirroring data with both engines being synchronized.

As per claim 11, this dependent claim is rejected for the similar rationale as given above for claims 2, 3, and 10.

As per claim 12, this dependent claim is rejected for the similar rationale as given above for claim 1.

As per claim 13, this dependent claim is rejected for the similar rationale as given above for claim 3.

As per claim 14, this dependent claim is rejected for the similar rationale as given above for claim 4.

As per claim 15, this dependent claim is rejected for the similar rationale as given above for claim 9.

As per claim 16, this dependent claim is rejected for the similar rationale as given above for claims 1, 7, and 14..

As per claim 17, this dependent claim is rejected for the similar rationale as given above for claim 7.

As per claim 18, this dependent claim is rejected for the similar rationale as given for above for claim 3.

As per claim 19, this dependent claim is rejected for the similar rationale as given above for claims 4 and 14.

As per claim 20, this independent claim is rejected for the similar rationale given to claims 1-7 and 9-19.

As per claim 21, this dependent claim is rejected for the similar rationale as given above for claim 2.

As per claim 22, this dependent claim is rejected for the similar rationale as given above for claim 3.

As per claim 28, this dependent claim is rejected for the similar rationale as given above for claim 1.

As per claim 29, this dependent claim is rejected for the similar rationale as given above for claim 1.

As per claim 30, this dependent claim is rejected for the similar rationale as given above for claim 2.

As per claim 31, this dependent claim is rejected for the similar rationale as given above for claim 3.

As per claim 32, this dependent claim is rejected for the similar rationale as given above for claim 10.

As per claim 33, this dependent claim is rejected for the similar rationale as given above for claim 14.

As per claim 34, this dependent claim is rejected for the similar rationale as given above for claim 5.

As per claim 35, this dependent claim is rejected for the similar rationale as given above for claim 6.

As per claim 36, this dependent claim is rejected for the similar rationale as given above for claim 2.

As per claim 37, this dependent claim is rejected for the similar rationale as given above for claim 3.

As per claim 38, this dependent claim is rejected for the similar rationale as given above for claim 1.

As per claim 39, this dependent claim is rejected for the similar rationale as given above for claim 7.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over (WO 95/00906) Rollins et al, hereafter Rollins, (US 5,157,663) Major et al, hereafter Major, and (US 6,047,356) Anderson et al, hereafter Anderson in view of (US 5,276,867) Kenley et al, hereafter Kenley.

As per claim 23, Rollins, Major, and Anderson failed to teach, A virtual storage area network as recited in claim 20, further comprising a third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device; and a third mirror engine, wherein the third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage device. Kenley teaches, A virtual storage area network as recited in claim 20, further comprising a third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device; and a third mirror engine, wherein the third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage device (col. 2, lines 44-55, col. 4, lines 61-66, and col. 6, lines 40-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device; and a third mirror engine, wherein the third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage device and to combine Rollins' data mirroring and Major's O/I engine with Kenley's third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device; and a third mirror engine, wherein the third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage

device because such a combination would allow Rollins', Major's and Kenley's systems to have a third server as a backing store (hierarchical storage server that has a higher capacity and lower speed than the secondary storage and can include erasable optical, write-once-read-many (WORM disks, or tape volumes.

As per claim 24, Rollins, Major, and Anderson failed to teach, A virtual storage area network as recited in claim 23, further comprising means for communicating between the third server and the first server and also between the third server and the second server. Kenley teaches, A virtual storage area network as recited in claim 23, further comprising means for communicating between the third server and the first server and also between the third server and the second server (col. 7, lines 51-62). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have means for communicating between the third server and the first server and also between the third server and the second server and to combine Rollins' data mirroring and Major's O/I engine with Kenley's communicating between the third server and the first server and also between the third server and the second server because such a combination would allow Rollins', Major's and Kenley's systems to have the backing storage (third server) to have control fro the backup system by using a baseline backup and an incremental backup.

As per claim 25, Rollins failed to teach, A virtual storage area network as recited in claim 20, wherein the first server and the second server execute a policing protocol to determine whether a server, upon receiving a write request, has write access priority for writing data to the first mass storage device and the second mass storage device.

Major teaches, A virtual storage area network as recited in claim 20, wherein the first

server and the second server execute a policing protocol to determine whether a server,

upon receiving a write request, has write access priority for writing data to the first mass

storage device and the second mass storage device (col. 2, lines 42-63 and col. 6, lines

39-48). It would have been obvious to one having ordinary skill in the art at the time the

invention was made to have the first server and the second server execute a policing

protocol to determine whether a server, upon receiving a write request, has write access

priority for writing data to the first mass storage device and the second mass storage

device and to combine Rollins' data mirroring with Major's first server and the second

server execute a policing protocol to determine whether a server, upon receiving a write

request, has write access priority for writing data to the first mass storage device and

the second mass storage device because such a combination would allow Rollins' and

Major's systems to have a high speed connection and to have the primary and backup

processing systems on separate computers.

As per claim 26, this dependent claim is rejected for the similar rationale as given

above for claims 23-25.

As per claim 27, this dependent claim is rejected for the similar rationale as given

above for claims 23-26.

Response to Arguments

6.   Applicant's arguments filed 06/29/05 have been fully considered but they are not

persuasive.

Issue no. 1: Applicants' argue: "... A claimed invention is unpatentable for

obviousness if the differences between it and the prior art "are such that the subject

matter as a whole would have been obvious at the time the invention was made to a

person having ordinary skill in the art." 35 USC 103(a) (2004); Graham v. John Deere

Co., 383 US 1, 14 (1966); MPEP 2142. Obviousness is a legal question based on

underlying factual determinations including: (1) the scope and content of the prior art,

including what that prior art teaches explicitly and inherently; (2) the level of ordinary

skill in the prior art; (3) the differences between the claimed invention and the prior art;

and (4) objective evidence of nonobviousness. Graham, 383 US at 17-18. It is well

established that "every limitation positively recited in a claim must be given effect in

order to determine what subject matter that claim defines." In re Wilder, 166 USPQ 545,

548 (CCPA 1970) has been considered but the argument is not persuasive. Response:

It is assumed that every reference relies to some extent on the knowledge of persons

skilled in the art to complement that which is disclosed therein. Further, the skilled

artisan is presumed to know something more about the art than only what is disclosed

in the applied reference/references. In other words, the person having ordinary skill in

the art has a level of knowledge apart from the content of the references. In re Bode,

550 F.2d 656, 660, 193 USPQ 12, 16 (CCPA 1977); In re Jacoby, 309 F.2d 513, 516,

135 USPQ 317, 319 (CCPA 1962). A conclusion of obviousness is established "from

common knowledge and common sense of the person of ordinary skill in the art without

any specific hint or suggestion in a particular reference." In re Bozek, 416 F.2d 1385,

1390, 163 USPQ 545, 549 (CCPA 1969). Also see MPEP 2144 entitled "Sources of

Rationale Supporting a Rejection Under 35 U.S.C. 103: RATIONALE MAY BE IN A

REFERENCE, OR REASONED FROM COMMON KNOWLEDGE IN THE ART,

SCIENTIFIC PRINCIPLES, ART – RECOGNIZED EQUIVALENTS, OR LEGAL

PRECEDENT."

Issue no. 2: Applicants' argue: Rollins not Major teach or suggest a first server

having write access to a first mass storage device and a second mass storage device

and this write access permits the first server to initiate execution of the write request at

the first mass storage device and the second mass storage device without using an I/O

device of the second server has been considered but is not persuasive. Response: In

response to Applicants' argument that the references fail to show certain features of

applicants' invention, it is noted that the features upon which applicants' rely (i.e., "the

write access permits the first server to initiate execution of the write request at the first

mass storage device and the second mass storage device without using an I/O device

of the second server") are not recited in the rejected claim(s). Although the claims are

interpreted in light of the specification, limitations from the specification are not read into

the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Issue no. 3: Applicants' argue: There is no motivation for combining Major with

Rollins has been considered but is not persuasive. Response: The motivation has been

addressed above in Issue no. 1 and there is not any reason to address this argument

again.

Conclusion: The Examiner is entitled to give limitations their broadest reasonable

interpretation in light of the Specification (see below):

2111   Claim Interpretation; Broadest Reasonable Interpretation [R-1]

>CLAIMS MUST BE GIVEN THEIR BROADEST REASONABLE INTERPRETATION

*During patent examination, the pending claims must be "given the broadest reasonable
interpretation consistent with the specification." Applicant always has the opportunity to amend the claims
during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once
issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA
1969).<*

Applicants' are respectfully requested to point out in the claim(s) and claim

language the inventive concept of what is considered to be the invention.

Conclusion

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

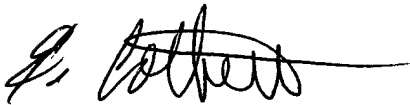than SIX MONTHS from the date of this final action.

Inquiries

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ella Colbert whose telephone number is 571-272-6741.

The examiner can normally be reached on Monday-Thursday, 6:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vincent Millin can be reached on 571-272-6747. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

E. Colbert
Primary Examiner
September 19, 2005